STAT 499/699 Computational Finance

Syllabus for STAT 499/699 – Spring 2020

Instructors: Michael D. Jackson, with additional participation by interested faculty and scholars

Educational Purpose: Students in STAT 499/699 Computational Finance will be exposed to the broad array of computational finance research taking place on campus and in the larger scientific and business communities. Further, students will acquire a deeper understanding of a specific topic area in quantitative finance. The specific area changes by semester and includes topics such as resources for quantitative finance; security of financial markets; detecting and mitigating systemic risk; the role of analytics and statistics in the broader energy markets; cryptocurrencies; high frequency trading/electronic markets; robo-advising; blockchain applications; volatility and market making; and sports gaming and risk management.

The quantitative finance topic is selected at the beginning of the semester. Students are assigned specific readings/lectures around the topic and class time is spent on group discussions of these papers.

Format: Bi-weekly group discussions **+** attending quantitative finance seminars on campus or in the larger Houston area.

Class meeting schedule: Classes are scheduled to meet Wednesdays from 11:00-11:50 a.m. on dates which are posted at **STAT499-699-schedule-txt**

Assignments and grading:

- Students will be expected to actively participate in the bi-weekly group discussions and will be graded on that participation.

- Students are also expected to attend a minimum of four quantitative finance seminars at Rice, around the Houston SMSA, or appropriate Webinars. Written summaries of each seminar are required.

Additional requirement for STAT 699 (graduate students): Students registered for STAT 699 will be required to develop a group presentation around the bi-weekly discussions. The presentation should be sufficiently descriptive that future students studying quantitative finance can efficiently understood the issues and the current state-of-the-art on the chosen topic. When appropriate, students will be asked to submit a white paper to the department archival paper network. STAT 499 students will be invited to contribute to the presentation and paper, but leadership is expected from the STAT 699 students.

Variable credit: Any student registered for more than one credit hour is expected to propose and conduct ***independent*** research culminating in a poster presented at CoFES events such as the Eubank conference, or at the department end of semester poster session, as well as a white paper on the research. Any proposals for such research must be made with a detailed prospectus prior to the course drop add date.

Disabilities: Any student with a documented disability needing academic adjustments or accommodations is requested to speak with the instructor during the first two weeks of class. All discussions will remain confidential. Students with disabilities should also contact Disability Support Services in the Ley Student Center. Further information is available at http://dss.rice.edu/.

Changes to this syllabus may be published from time to time, with notice and explanation given in class and via Canvas (if used).

Rev: 1/2/20